

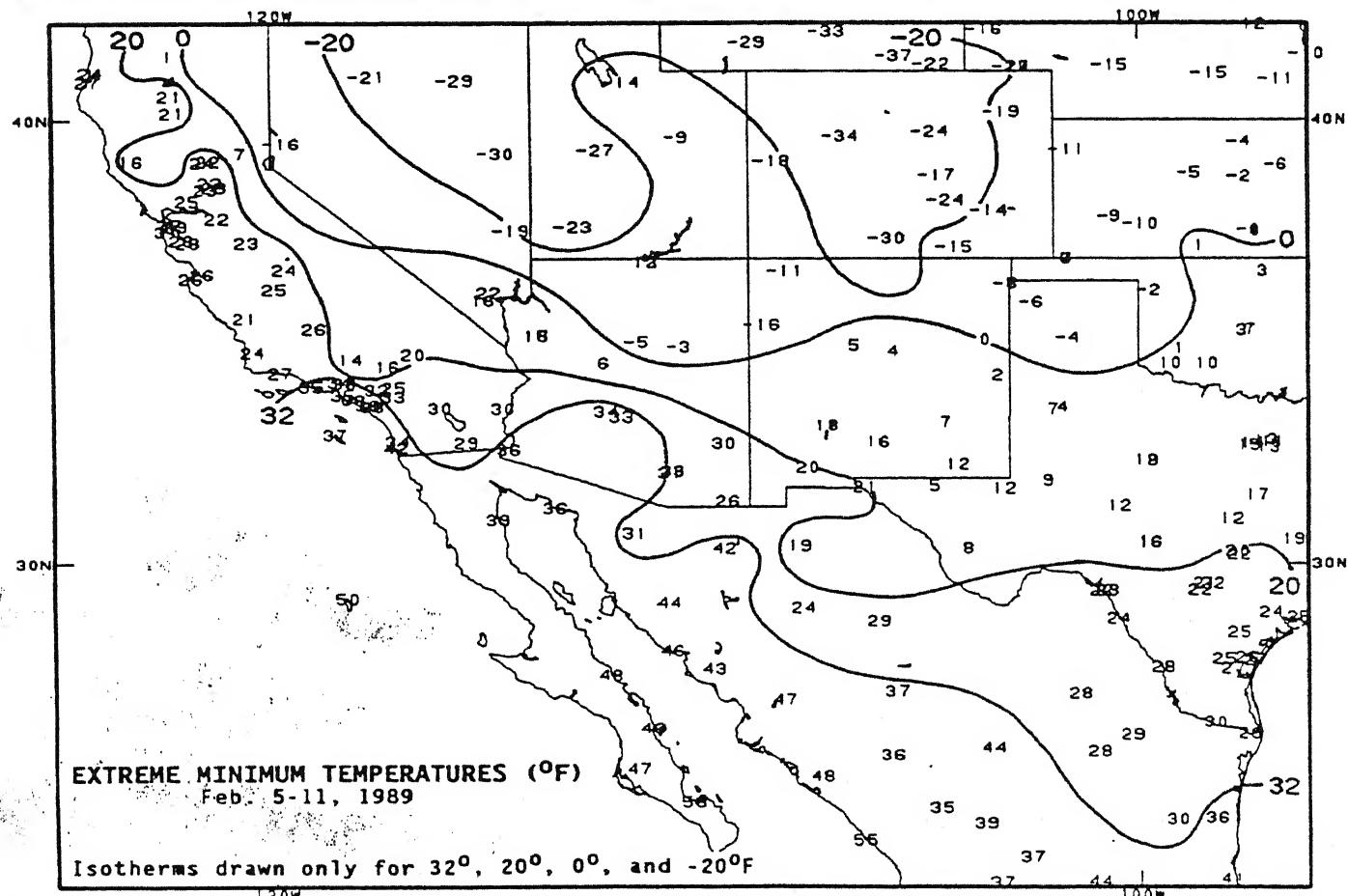
SPECIAL  
CLIMATE  
SUMMARY:  
U.S.  
DRYNESS  
SINCE  
12/1/88

# WEEKLY CLIMATE BULLETIN

No. 89/06

Washington, DC

February 11, 1989



EXTREMELY COLD WEATHER COVERED MUCH OF THE CONTIGUOUS UNITED STATES LAST WEEK AS SUBFREEZING TEMPERATURES REACHED COASTAL CALIFORNIA AND PLUNGED AS FAR SOUTH AS SOUTHERN TEXAS, NORTHEASTERN MEXICO, ALONG THE GULF COAST, AND NORTHERN FLORIDA.

UNITED STATES DEPARTMENT OF COMMERCE

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL WEATHER SERVICE - NATIONAL METEOROLOGICAL CENTER

## WEEKLY CLIMATE BULLETIN

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This Bulletin is issued weekly by the Climate Analysis Center and is designed to indicate, in a brief, concise format, current surface climatic conditions in the United States and around the world. The Bulletin contains:

- Highlights of major global climatic events and anomalies.
- U.S. climatic conditions for the previous week.
- U.S. apparent temperatures (summer) or wind chill (winter).
- Global two-week temperature anomalies.
- Global four-week precipitation anomalies.
- Global monthly temperature and precipitation anomalies.
- Global three-month precipitation anomalies (once a month).
- Global twelve-month precipitation anomalies (every 3 months).
- Global temperature anomalies for winter and summer seasons.
- Special climate summaries, explanations, etc. (as appropriate).

Most analyses contained in this Bulletin are based on preliminary, unchecked data received at the Center via the Global Telecommunication System. Similar analyses based on final, checked data are likely to differ to some extent from those presented here.

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# GLOBAL CLIMATE HIGHLIGHTS

MAJOR CLIMATIC EVENTS AND ANOMALIES AS OF FEBRUARY 11, 1989  
[Approximate duration of anomalies is in brackets]

1. Alaska:

### BITTER COLD ENDS.

Temperatures rose to as much as  $18.7^{\circ}\text{C}$  ( $33.6^{\circ}\text{F}$ ) above normal as bitterly cold conditions ended. Only southeastern Alaska remained colder than normal [Ended at 3 weeks].

2. Northwestern United States and Southwestern Canada:  
**DRYNESS DEVELOPS.**

Little or no precipitation fell in the Pacific Northwest and adjacent Canada as unusually dry conditions developed (see Special Climate Summary) [5 weeks].

3. Eastern United States:

### AREA STILL DRY.

Generally less than 11.2 mm (0.44 inches) of precipitation was reported as dry weather persisted across the eastern United States (see Special Climate Summary) [5 weeks]. Cold air invaded the entire United States, where temperatures were as much as  $17.0^{\circ}\text{C}$  ( $30.6^{\circ}\text{F}$ ) below normal, and replaced the mild weather regime of earlier weeks (see U.S. Weekly Climate Highlights) [Ended at 3 weeks].

4. Uruguay and Northern Argentina:

### AREA REMAINS DRY AND WARM.

Less than 14.0 mm (0.55 inches) of precipitation fell as dryness persisted [33 weeks]. Unusually warm conditions continued with temperatures up to  $4.5^{\circ}\text{C}$  ( $8.1^{\circ}\text{F}$ ) above normal [11 weeks].

5. Europe and the Middle East:

### DRY WEATHER PERSISTS; MILD IN NORTH.

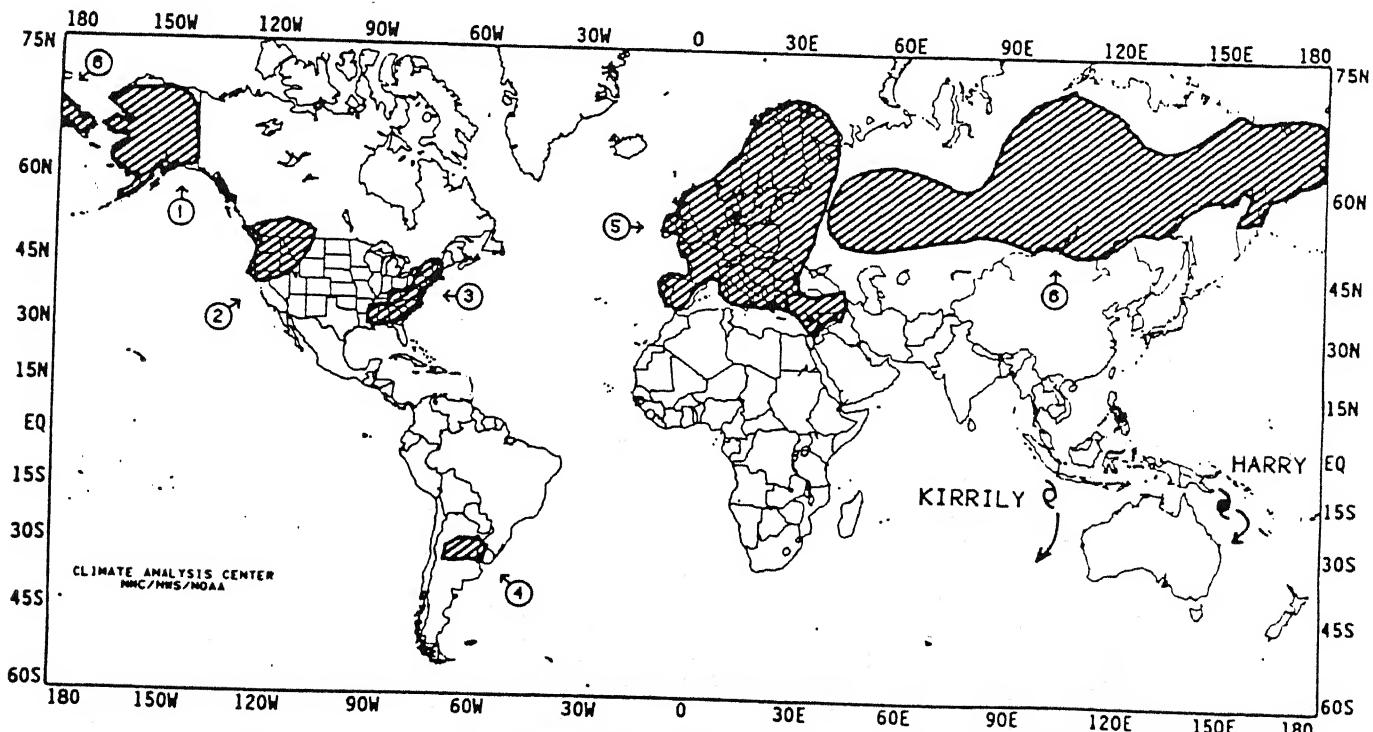
Little or no precipitation fell across Europe and the Middle East as dryness remained [10 weeks]. Unusually mild weather prevailed over the northern half of the Continent with temperatures up to  $11.0^{\circ}\text{C}$  ( $19.8^{\circ}\text{F}$ ) above normal [5 weeks].

6. Siberia:

### MILD CONDITIONS SPREAD.

The mild weather regime, with temperatures reaching  $21.0^{\circ}\text{C}$  ( $37.8^{\circ}\text{F}$ ) above normal, spread across most of Siberia [18 weeks].

(NOTE: Text precipitation amounts and temperature departures are this week's values).



Approximate locations of the major anomalies and events described above are shown on this map. See other maps in this Bulletin for current two week temperature anomalies, four week precipitation anomalies, longer term anomalies, and other details.

# UNITED STATES WEEKLY CLIMATE HIGHLIGHTS

FOR THE WEEK OF FEBRUARY 5 THROUGH FEBRUARY 11, 1989.

Much of the nation experienced relatively dry and unseasonably cold conditions in response to a large dome of high pressure that governed last week's weather patterns. Early in the week as the cold air plunged southward into the southern Great Plains and Southeast, moisture overrunning the cold front produced freezing rain and sleet that glazed eastern Texas, northern Louisiana, Arkansas, Mississippi, Alabama, and Tennessee. Farther west, a low pressure center over the southern Rockies dumped heavy snows on portions of the central and southern Rockies where up to 7 feet of snow fell on the ski resorts of northern New Mexico. Later in the week, a developing low pressure system off the coast of southern California brought light rains to coastal regions and snows to the mountains. Bitterly cold northwesterly winds passing over the Great Lakes created heavy snow squalls in upper Michigan, northern Wisconsin, western lower Michigan, northwestern Indiana, and along the southern shores of Lakes Erie and Ontario. By Saturday, temperatures began to moderate across most of the country, especially in the deep South after recording lows in the twenties.

Very few stations in the lower 48 states and Alaska measured heavy (more than 2 inches) precipitation last week. The exception to this included parts of the Tennessee Valley and southern Appalachians where between 2 and 3 inches of precipitation fell, according to the River Forecast Centers. Farther west, scattered locations in California and the southern Rockies observed more than an inch of precipitation, while most of the Hawaiian Island chain received numerous showers and thunderstorms early and late in the week (see Table 1). Light to moderate amounts occurred in California and the western Great Basin, in sections of the Rockies and central Great Plains, throughout most of the Great Lakes and northern New England, and from central Louisiana northeastward to the Delmarva Peninsula. Little or no precipitation fell on the Pacific Northwest,

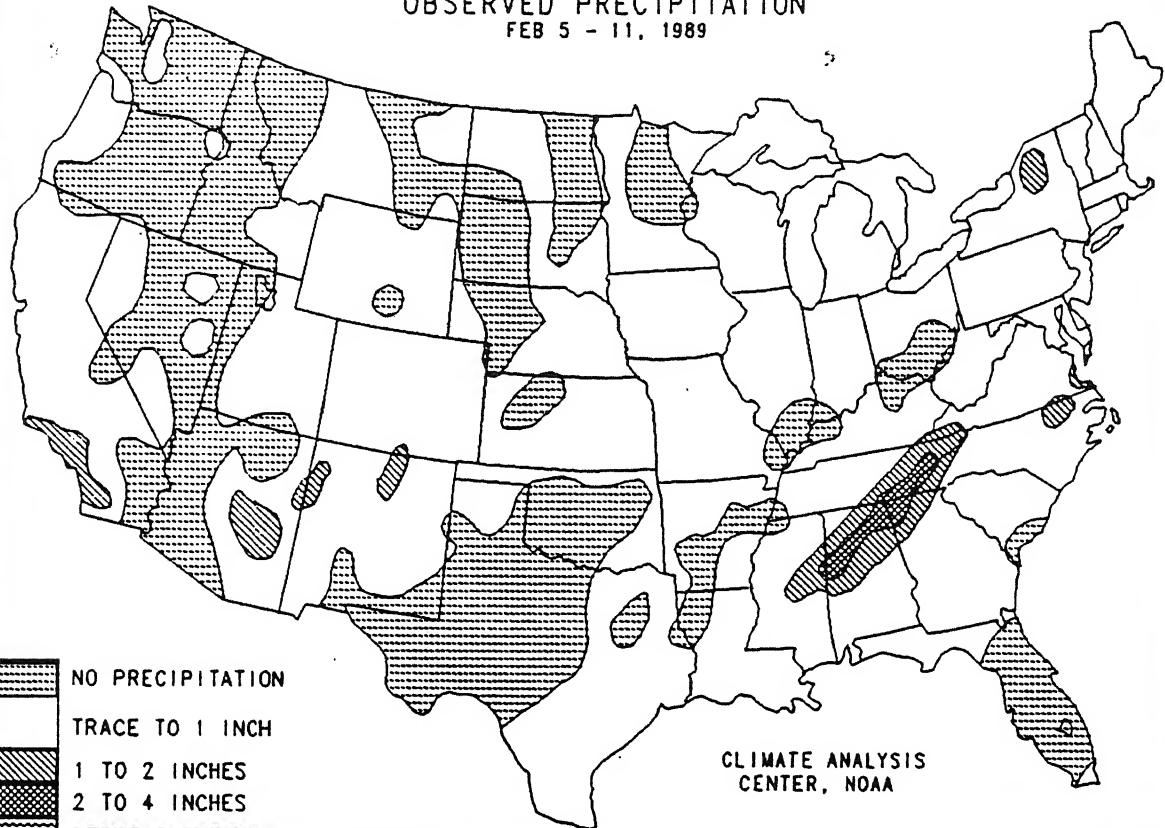
the northern and southern Intermountain West, the northern thirds of the Rockies and Great Plains, from Arkansas northeastward to Connecticut, in most of Florida, and along the central Gulf and southern Atlantic Coasts. Since December 1, 1988, several areas of the U.S. have recorded less than half the normal precipitation, especially along both coasts and in the nation's midsection. For further details, refer to the Special Climate Summary beginning on page 9.

The extensive area of high pressure that prevailed across the country brought cold conditions to the entire contiguous U.S. as readings below 32°F occurred along coastal California, in southern Texas and northern Mexico, along the Gulf Coast, and in northern Florida (see front cover and Figure 1). Subzero temperatures were recorded in the Intermountain West, throughout the Rockies, across the northern half of the Great Plains, in the upper Midwest, and northern New England. In the West, dozens of stations tied or set new daily minimum temperature records during the week, while several locations established new February record lows. Additionally, a few stations in Utah broke their all-time record low temperature (Vernal at -38°F, Bryce Canyon at -32°F, Dugway at -29°F, and Delta at -27°F). The greatest negative temperature departures (between -15° and -32°F) were found in most of the Intermountain West and Rockies, southern Texas, and the lower Missouri Valley (see Table 2). With the exception of Florida, the coasts of Georgia and South Carolina, southern Arizona, and northern New York, temperatures averaged below normal throughout the lower 48 states. In sharp contrast, most of Alaska, after enduring bitterly cold weather (readings below -50°F) from mid-January to early February, recorded unseasonably mild conditions last week. In the western and northern portions of the state, temperatures averaged as much as 34°F above normal (see Table 3). In the contiguous U.S., only southern Florida reported weekly temperature departures greater than +5°F.

TABLE 1. Selected stations with one or more inches of precipitation for the week.

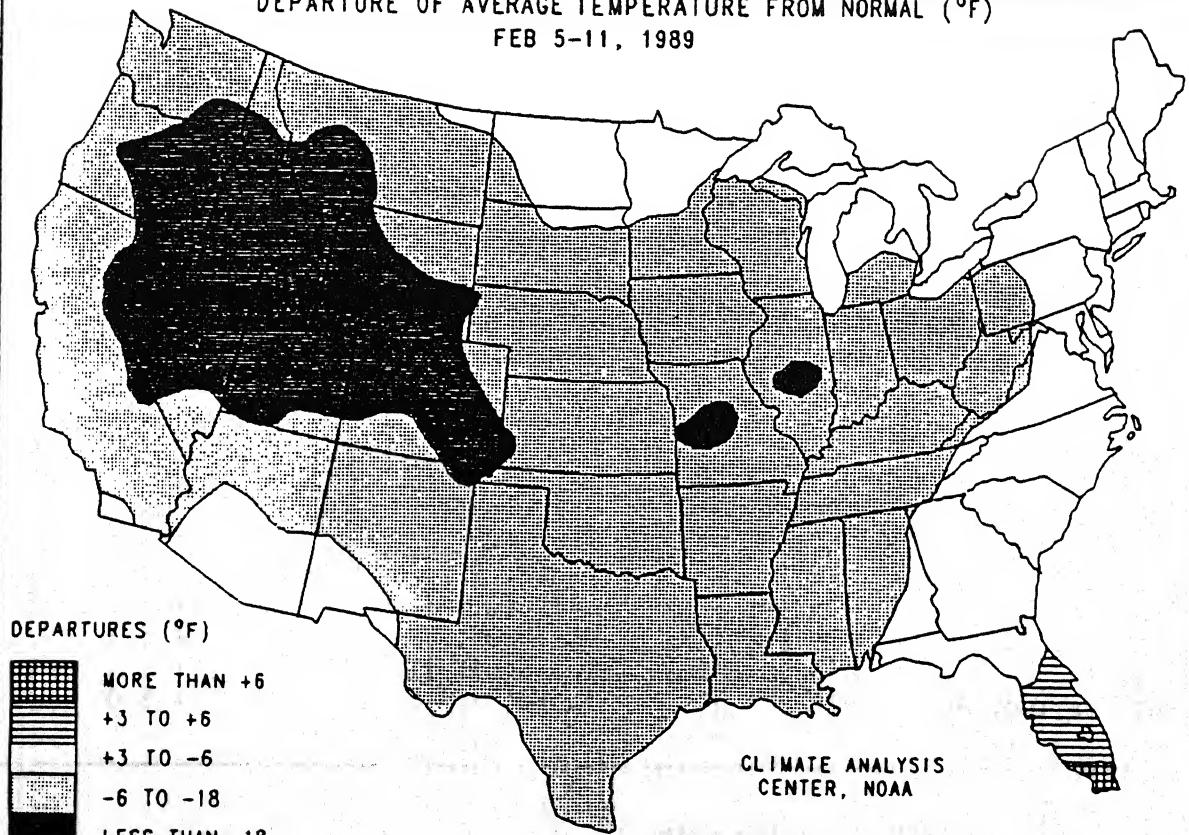
<u>Station</u>	<u>Amount (In)</u>	<u>Station</u>	<u>Amount (In)</u>
Kokee, Kauai, HI	3.59	Los Angeles, CA	1.15
Honolulu, Oahu, HI	3.08	Huntsville, AL	1.15
Hilo/Lyman, Hawaii, HI	2.09	McGrath, AK	1.10
Chattanooga, TN	2.01	Anniston, AL	1.08
Hancock/Houghton Co., MI	1.95	Tuscaloosa, AL	1.06
Knoxville, TN	1.82	Gallup, NM	1.03
Hampton/Langley AFB, VA	1.54	Buffalo, NY	1.03
Lancaster, CA	1.43	Columbus AFB, MS	1.02
Cold Bay, AK	1.40	Santa Barbara, CA	1.00
Talkeetna, AK	1.34	Birmingham, AL	1.00
Newport News, VA	1.18		

OBSERVED PRECIPITATION  
FEB 5 - 11, 1989



CLIMATE ANALYSIS  
CENTER, NOAA

DEPARTURE OF AVERAGE TEMPERATURE FROM NORMAL (°F)  
FEB 5-11, 1989



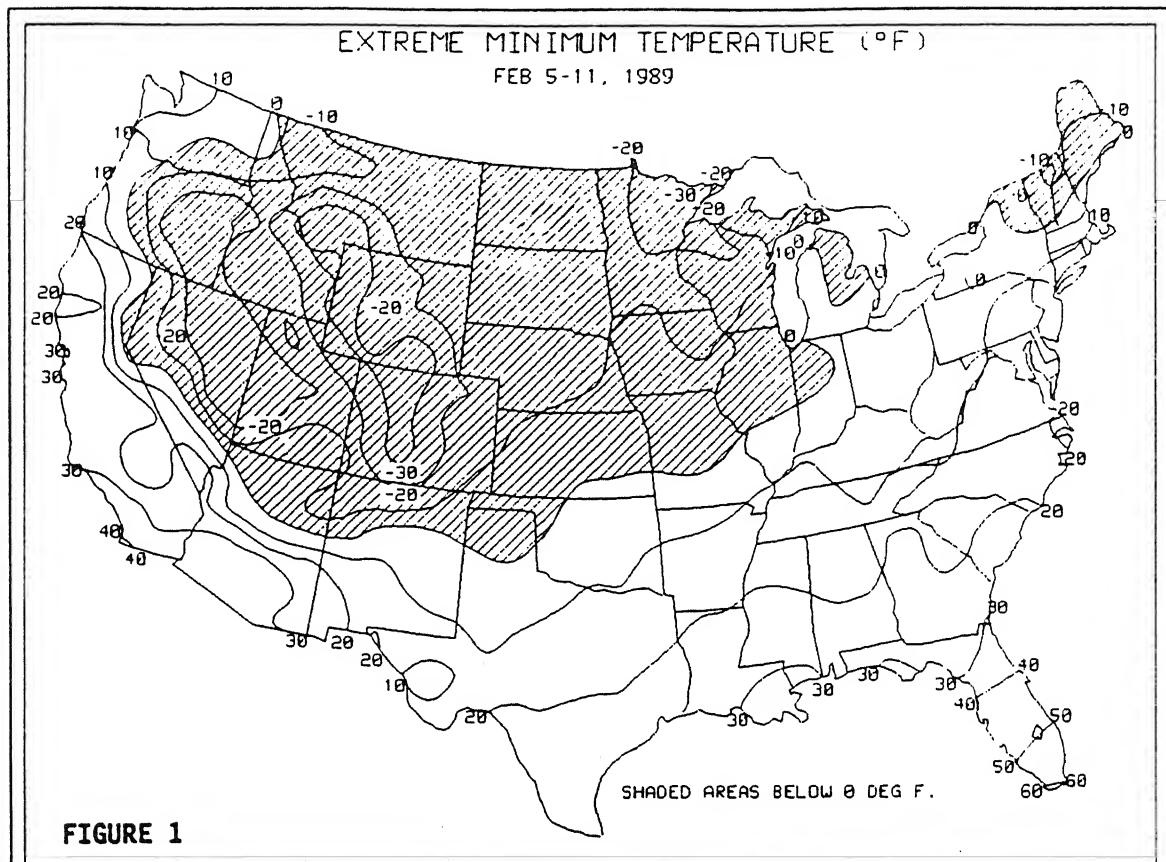
CLIMATE ANALYSIS  
CENTER, NOAA

TABLE 2. Selected stations with temperatures averaging 15.0°F or more BELOW normal for the week.

<u>Station</u>	<u>TDepNml</u>	<u>AvgT(°F)</u>	<u>Station</u>	<u>TDepNml</u>	<u>AvgT(°F)</u>
Baker, OR	-31.7	-1.5	Casper, WY	-18.7	7.3
Burns, OR	-30.6	1.8	Scottsbluff, NE	-18.6	10.0
Boise, ID	-28.3	6.4	Springfield, IL	-18.5	8.6
Helena, MT	-28.2	-3.6	Akron, CO	-18.2	11.2
Rock Springs/Sweetwater, WY	-25.5	-2.3	Kingsville NAS, TX	-17.9	43.3
Reno, NV	-25.3	11.0	Cheyenne, WY	-17.2	11.7
Laramie, WY	-25.0	-2.6	Eugene, OR	-16.7	26.1
Delta, UT	-24.8	5.0	Chanute, KS	-16.6	17.3
Pendleton, OR	-24.7	13.3	Topeka, KS	-16.5	14.1
Lander, WY	-24.4	0.0	Farmington, NM	-16.4	17.4
Pueblo, CO	-24.4	9.4	Worland, WY	-16.3	2.7
Walla Walla, WA	-24.3	12.6	Kalispell, MT	-16.2	8.9
Winnemucca, NV	-24.2	10.4	Garden City, KS	-16.2	16.6
Pocatello, ID	-23.6	4.6	Brownsville, TX	-16.1	45.6
Cedar City, UT	-23.6	9.3	Houston, TX	-15.9	37.9
Bozeman, MT	-23.1	-2.6	Palacios, TX	-15.9	38.9
Redmond, OR	-22.7	12.4	Missoula, MT	-15.7	11.1
Ely, NV	-22.6	5.3	Kansas City/Intl., MO	-15.5	16.0
Elko, NV	-22.5	7.1	Austin/Bergstrom, TX	-15.5	37.7
Lewiston, ID	-21.4	15.7	Tucumcari, NM	-15.4	24.5
Grand Junction, CO	-21.2	10.1	Harrison, AR	-15.3	23.0
Salt Lake City, UT	-21.0	11.6	Alice, TX	-15.3	41.9
Idaho Falls, ID	-20.5	2.1	McAllen, TX	-15.3	45.4
Burley, ID	-20.5	10.7	Daggett, CA	-15.2	37.0
Denver, CO	-20.4	12.2	Burlington, IA	-15.1	11.0
Colorado Springs, CO	-20.1	11.4	West Plains, MO	-15.1	20.2
Trinidad, CO	-20.1	13.7	Austin, TX	-15.1	36.6
Butte, MT	-19.6	0.7	Kansas City/Muni., MO	-15.0	17.4
Columbia, MO	-18.8	12.7	Clovis/Cannon AFB, NM	-15.0	25.1

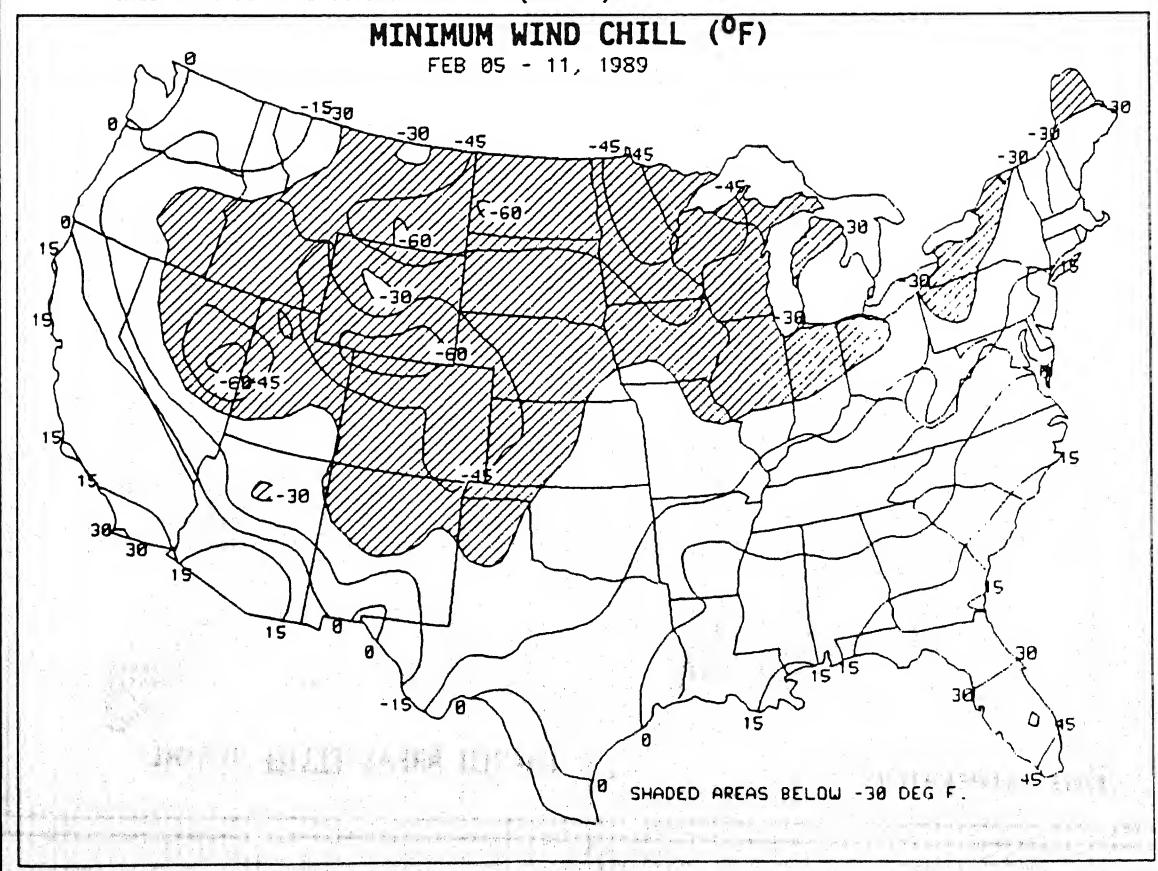
TABLE 3. Selected stations with temperatures averaging 5.0°F or more ABOVE normal for the week.

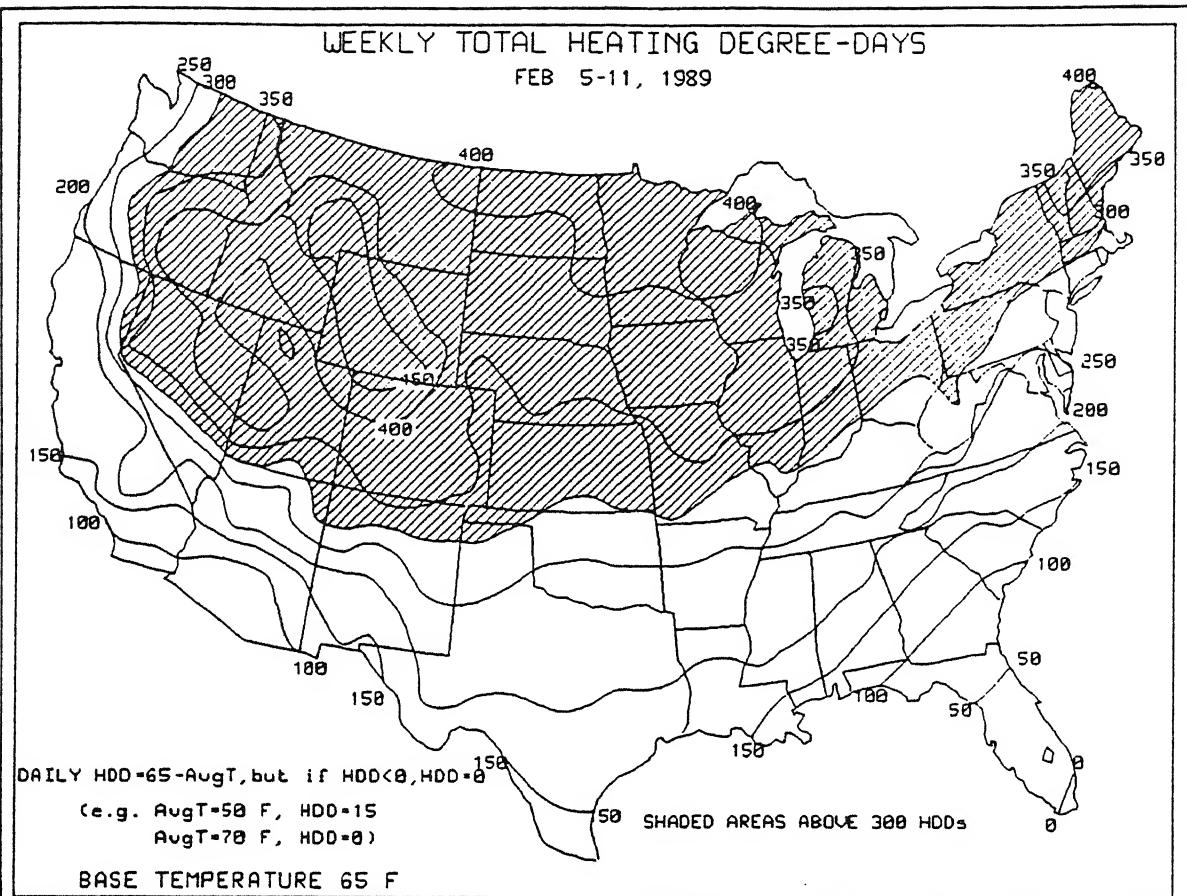
<u>Station</u>	<u>TDepNml</u>	<u>AvgT(°F)</u>	<u>Station</u>	<u>TDepNml</u>	<u>AvgT(°F)</u>
Barrow, AK	+33.7	14.6	Fairbanks, AK	+12.0	5.7
Kotzebue, AK	+29.3	24.6	Big Delta, AK	+ 9.7	10.0
Aniak, AK	+28.6	33.6	Cold Bay, AK	+ 7.6	35.1
McGrath, AK	+26.1	21.8	Ft. Lauderdale, FL	+ 6.3	72.1
Bethel, AK	+25.9	31.4	Ft. Myers, FL	+ 6.2	69.5
Nome, AK	+24.7	28.3	Miami, FL	+ 5.9	73.1
Bettles, AK	+24.1	17.3	Orlando, FL	+ 5.3	65.6
King Salmon, AK	+20.5	34.5	Northway, AK	+ 5.3	-7.6
Iliamna, AK	+13.2	30.2	Key West, FL	+ 5.1	74.7
St. Paul Island, AK	+12.6	35.3	Tampa, FL	+ 5.0	64.9



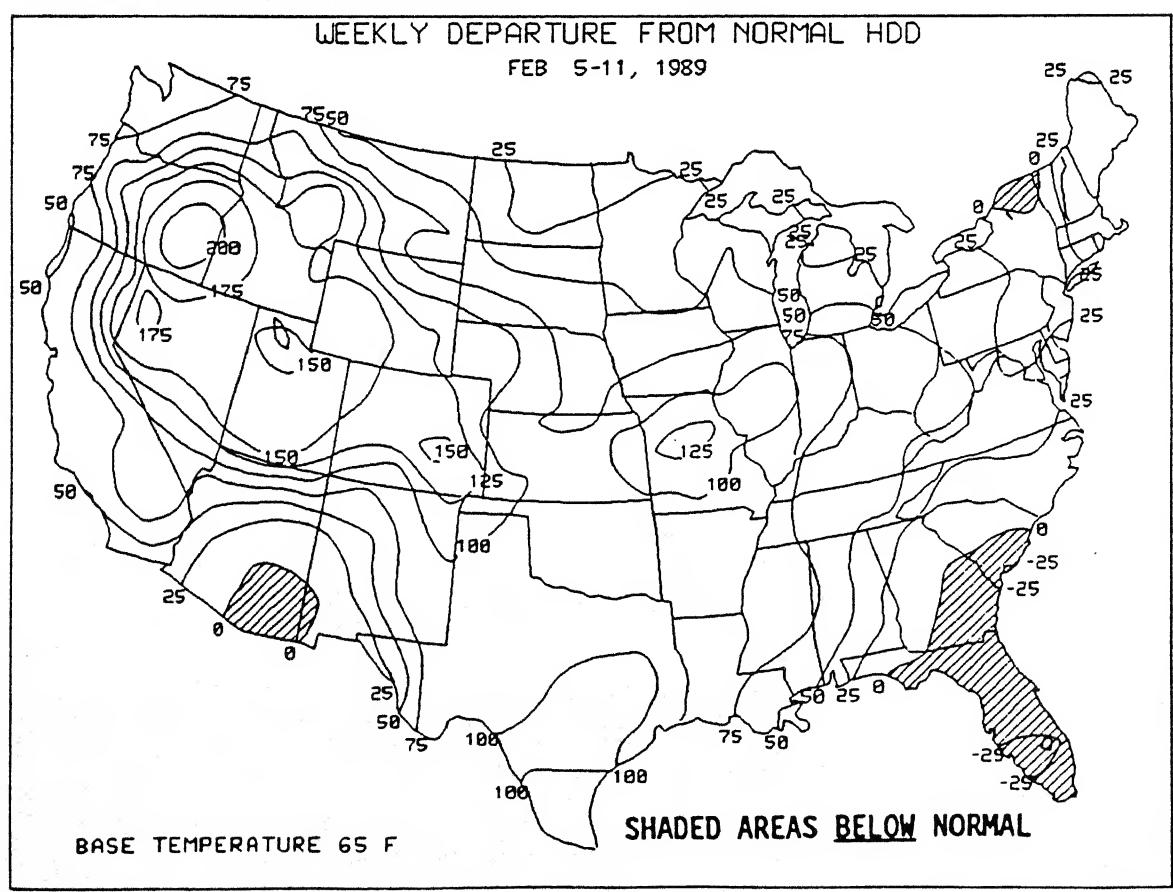
**FIGURE 1**

Extremely cold air settles across the nation as the freezing line extended to the Gulf Coast and northern Florida, into northern Mexico, and to the California coast while subzero readings occurred in much of the Rockies, Intermountain West, Great Plains, and upper Midwest (top). Wind chills below  $-30^{\circ}$ F were found throughout most of the west-central and north-central U.S., while even southern Texas endured wind chills near  $0^{\circ}$ F (bottom).



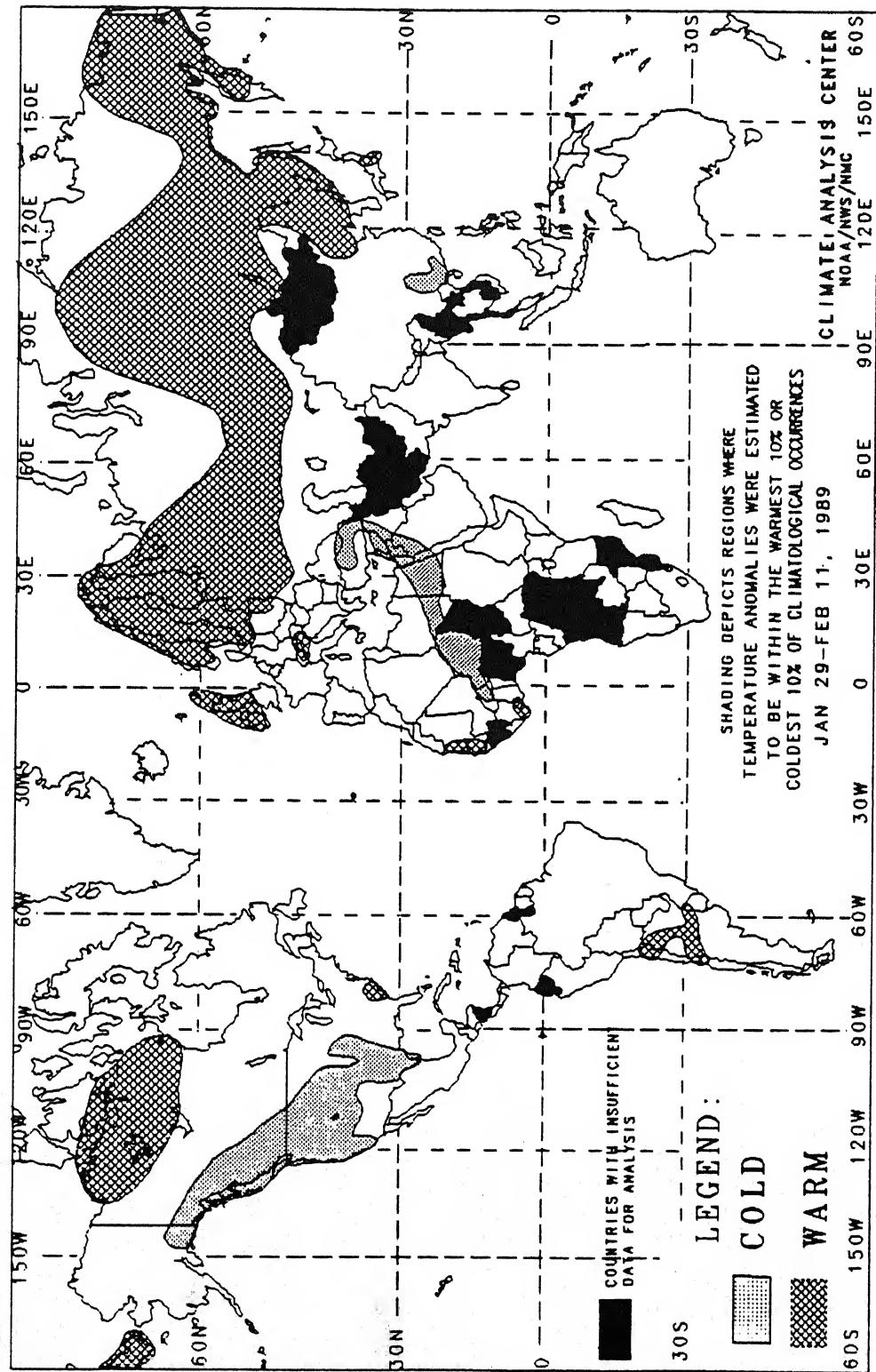


In response to the unseasonably cold weather, weekly heating usage was more than 300 HDDs across the northern half of the country (top) and weekly heating demand was more than 150% of normal in most of the West, southern Great Plains, and lower Mississippi Valley (bottom).



# WORLD TEMPERATURE ANOMALIES

2 WEEKS



The anomalies on this chart are based on approximately 2500 observing stations for which at least 13 days of temperature observations were received from synoptic reports. Many stations do not operate on a twenty-four hour basis so many night time observations are not taken. As a result of these missing observations the estimated minimum temperature may have a warm bias. This in turn may have resulted in an overestimation of the extent of some warm anomalies.

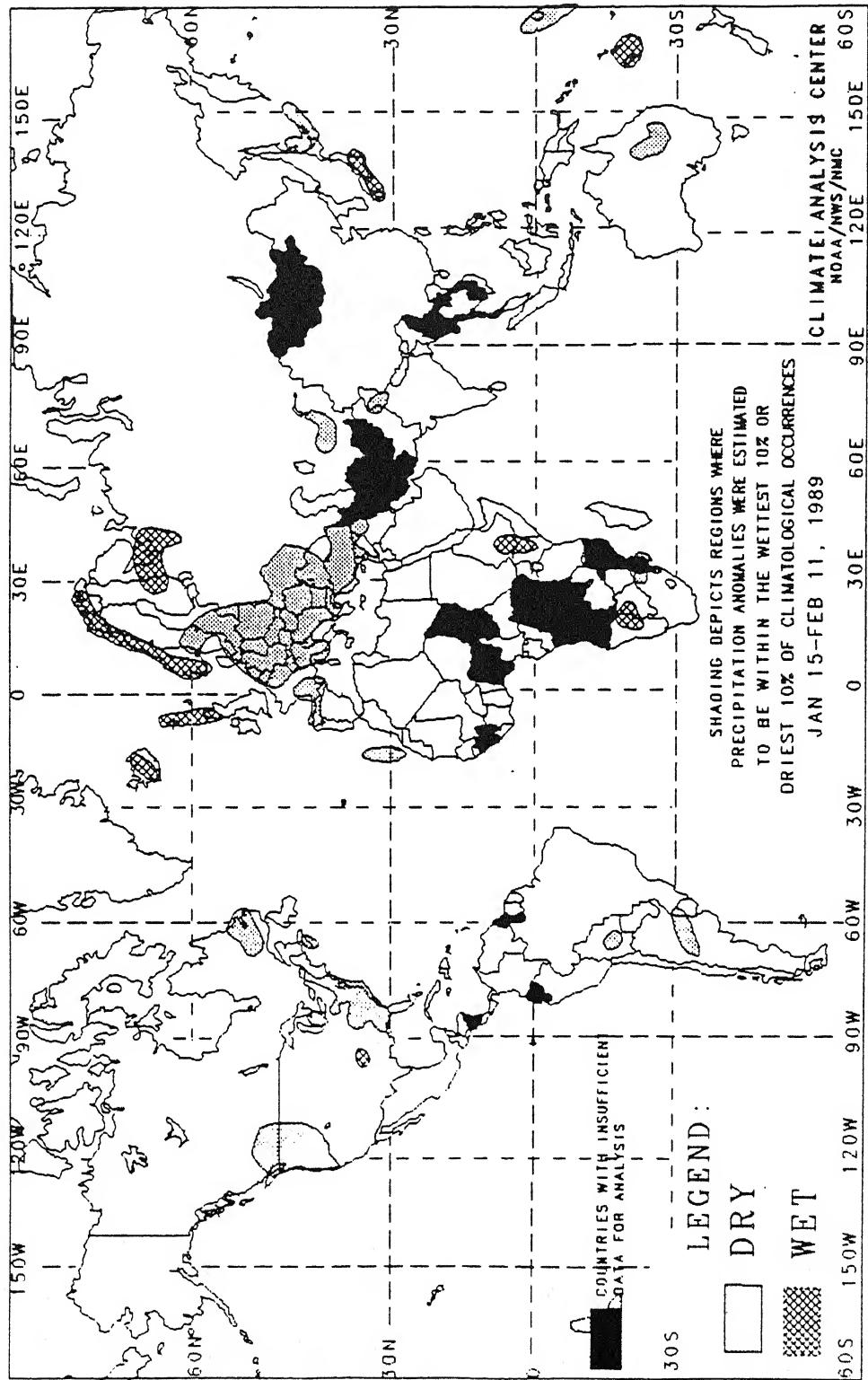
Temperature anomalies are not depicted unless the magnitude of temperature departures from normal exceeds 1.5°C.

In some regions, insufficient data exist to determine the magnitude of anomalies. These regions are located in parts of tropical Africa, Southwestern Asia, interior equatorial South America, and along the Arctic Coast. Either current data are too sparse or incomplete for analysis, or historical data is insufficient for determining percentiles, or both. No attempt has been made to estimate the magnitude of anomalies in such regions.

The chart shows general areas of two week temperature anomalies. Caution must be used in relating it to local conditions, especially in mountainous regions.

# GLOBAL PRECIPITATION ANOMALIES

4 WEEKS



The anomalies on this chart are based on approximately 2500 observing stations for which at least 27 days of precipitation observations (including zero amounts) were received or estimated from synoptic reports. As a result of both missing observations and the use of estimates from synoptic reports (which are conservative), a dry bias in the total precipitation amount may exist for some stations used in this analysis. This in turn may have resulted in an overestimation of the extent of some dry anomalies.

In climatologically arid regions where normal precipitation for the four week period is less than 20 mm, dry anomalies are not depicted. Additionally, wet anomalies for such arid regions are not depicted unless the total four week precipitation exceeds 50 mm.

In some regions, insufficient data exist to determine the magnitude of anomalies. These regions are located in parts of tropical Africa, south-western Asia, interior equatorial South America, and along the Arctic Coast. Either current data are too sparse or incomplete for analysis, or historical data is insufficient for determining percentiles, or both. No attempt has been made to estimate the magnitude of anomalies in such regions.

The chart shows general areas of four week precipitation anomalies. Caution must be used in relating it to local conditions, especially in mountainous regions.

# SPECIAL CLIMATE SUMMARY

CLIMATE ANALYSIS CENTER, NMC

NATIONAL WEATHER SERVICE, NOAA

UPDATE ON DRYNESS IN THE CONTIGUOUS UNITED STATES SINCE DECEMBER 1988

After an unusually wet November across much of the nation (see WCB #88/49 dated 12/3/88, page 9), especially in the Midwest, the Pacific Northwest, and along the Atlantic Coast, the past 2 1/3 months have been abnormally dry in the latter two regions. Since the last review (see WCB #89/4 dated 1/28/89, page 7), dryness has persisted along the Atlantic Coast and in the Pacific Northwest as many areas have observed less than half the normal precipitation during the past 10 1/2 weeks (see Figure 1). Precipitation deficits of more than 6 inches have accumulated along the eastern Gulf Coast, in parts of the southern Piedmonts, in eastern New England, and along the northern half of the Pacific Coast (see Figure 2).

In contrast, regions that experienced record dryness during the Spring and early Summer of 1988, namely the northern thirds of the Great Plains and Rockies and the Mississippi, Ohio, and Tennessee Valleys, have generally measured near to above normal precipitation since December 1988. Portions of the central and southern Great Plains, which had previously recorded subnormal precipitation since October 1988 (see WCB #89/3 dated 1/21/89), have recently seen an increase in precipitation but long-term totals are still below normal. Based upon the long-term Palmer Drought Index (PDI) for the week ending Feb. 4, 1989, extensive areas of severe and extreme drought remained in parts of the Far West, northern Rockies, western Corn Belt, and eastern Texas (see Figure 3). The recent dryness along the East Coast has been depicted in the PDI with the development of moderate dryness.

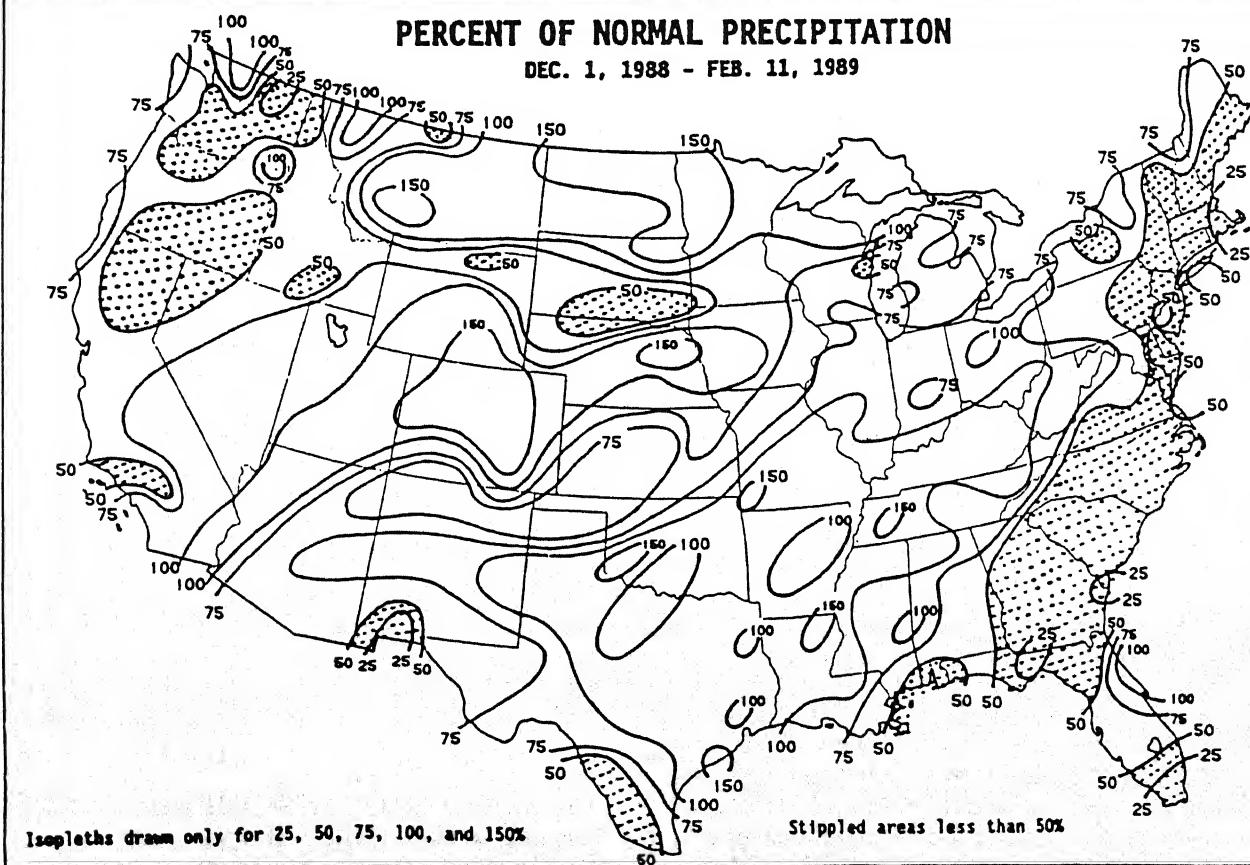


Figure 1. Percent of normal precipitation during Dec. 1, 1988-Feb. 11, 1989. Less than half the normal precipitation has fallen along much of the Atlantic and Pacific Coasts and in parts of the Great Plains.

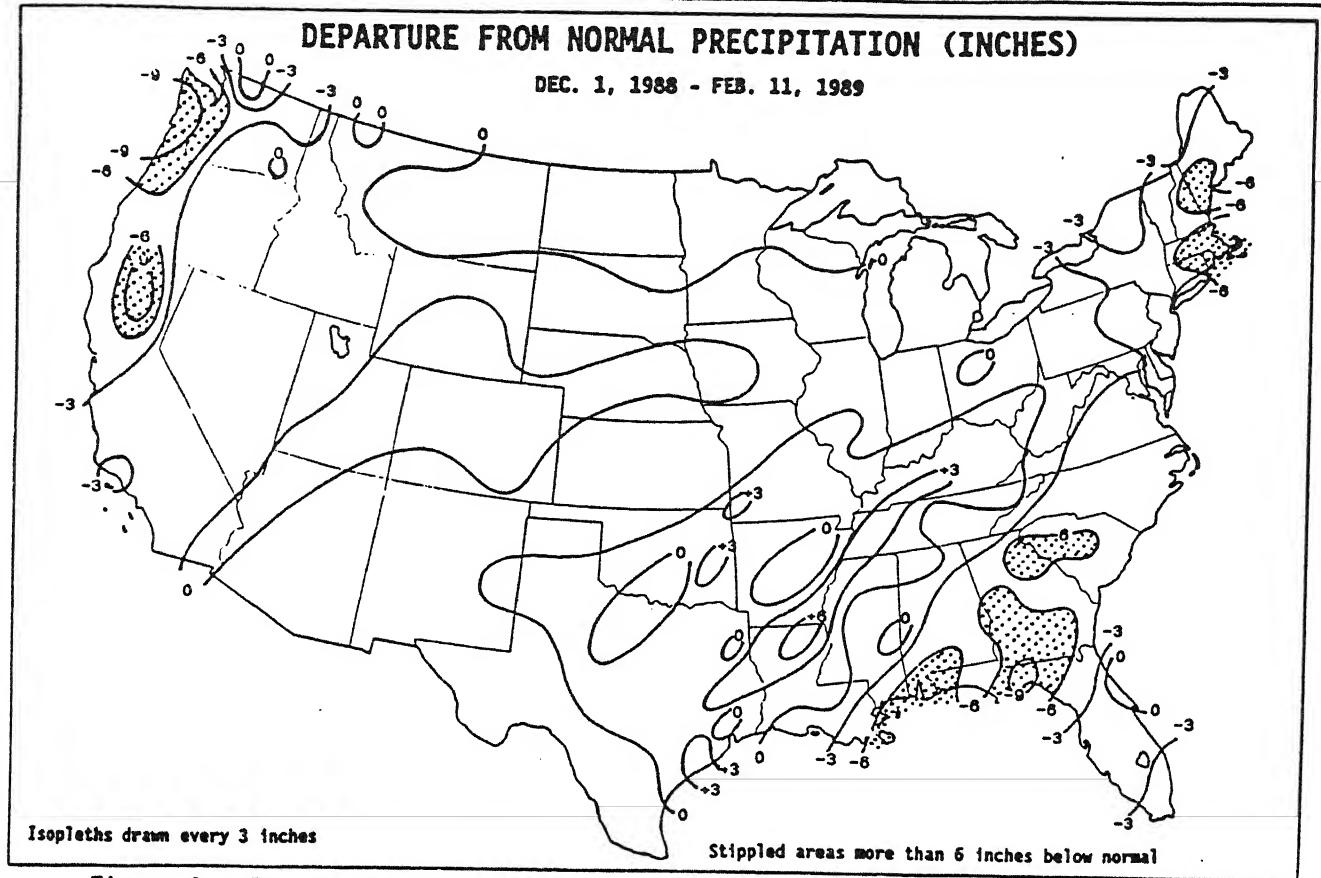


Figure 2. Departure from normal precipitation (inches) during Dec. 1, 1988-Feb. 11, 1989. Deficits of more than 6 inches have accumulated in portions of the Gulf Coast, New England, and Pacific Northwest.

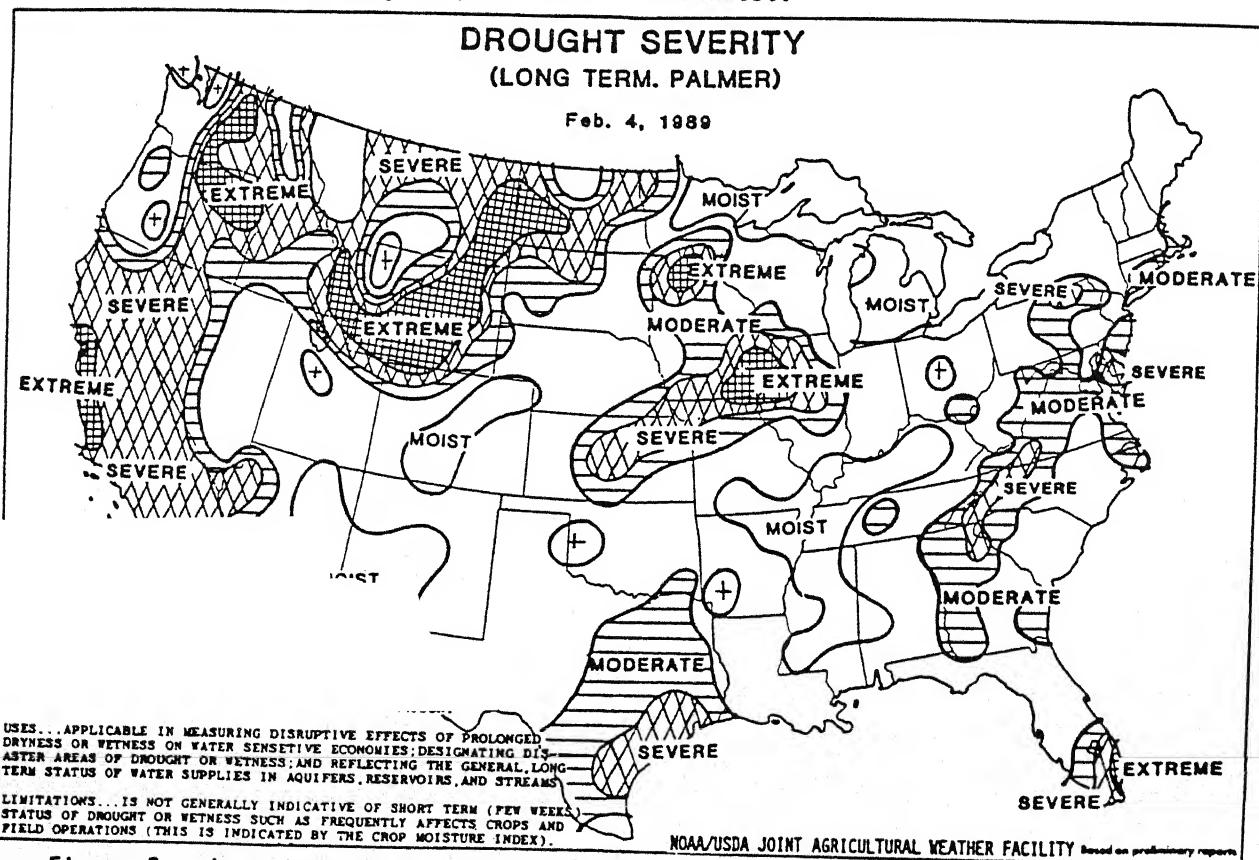


Figure 3. Long-term Palmer Drought Index for the week ending Feb. 4, 1989. Many areas of the lower 48 states are experiencing moderate, severe, or extreme drought, especially in the Far West, the northern Rockies, and the western Corn Belt, while moderate dryness has recently developed in the East.

